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# Sinanthropus in Britain:

# International Science and the Nature of Humanity, 1920-1939.

## Abstract

The Peking Man fossils discovered at Zhoukoudian in north-east China in the 1920s and 1930s were some of the most dramatic scientific discoveries of the interwar period, becoming an international scientific and media sensation. This article examines their publicization and discussion in Britain, where they were engaged with by some of the world's leading authorities in human evolution, and a media and public widely interested in the field of human origins. This international link – simultaneously promoted by scientists on the ground in China and in the metropolitan context – reflected wider debates on the character and importance of international networks, the role of science in the modern world, and changing definitions of race, development and human nature. This article illustrates how the field of human origins was an important means of binding these areas together and translating scientific work in a way which simultaneously depended on appearing authoritative and credible, while also evoking elements of mystery and adventurous excitement. It argues that these linked uncertainties were intrinsic aspects of contemporary views of both science and human development, evoking not only the complexities of contemporary regard for the international and public dynamics of scientific research, but wider concerns over human nature, which oscillated between optimistic notions of unity and progress and pessimistic ones of essential differences and the potential for misdirected development.

# Introduction

'Pithecanthropus and Sinanthropus seem to some people more real than Hitler or Mussolini. Anything is believed, however absurd, if it hangs all its weight on the missing link between men and animals' lamented G. K. Chesterton in his column in The Illustrated London News in December 1933.[1] This was possibly an exaggeration, but not by much. In the early-twentieth century, human evolution was one of the most dramatic and well-publicized fields of scientific research. Evocative accounts of expeditions to distant regions to 'hunt for man's ancestors' worked within wider interest in exploration, adventure and exoticism. The specimens unearthed were no less striking. A series of ancient types were deduced from fragments of bones, skulls and teeth, and given mysterious names of Pithecanthropus and Eoanthropus, individual identities as the Old Man of La Chapelle aux Saints and the Taung Baby, or formed into combinations of anatomy and site: Neanderthal, Java, Rhodesia and Sussex man, the Piltdown Skull and the Mauer Jaw. Rebuilt as strange, shambling ape-like creatures, they were debated across scientific networks and the public media. The entwined discourse raised significant questions. How could scientists know and uncover these lost forms, and how reliable was their authority? Were these long-dead creatures human ancestors, lost relatives or doomed aberrations? And what did their lives and fates reveal about the fundamentals of human nature?

The history of palaeoanthropology is therefore ideally suited to examine numerous issues, including processes of transnational exchange, the dynamics of public scientific debate, and conceptions of humanity.[2] However, the subject's global scope ensures that close case-studies are essential. This paper focuses on one specific set of relations, tracing how the excavation, discovery and promotion of Peking Man — Sinanthropus pekinensis — interacted with scientists and the media in metropolitan Britain. As shall become apparent,

this link, while significant, formed only one corner of a whole series of networks, whose relative importance shifted alongside personal connections, theoretical principles, institutional authority and money. However, it strongly links the above themes, allowing a simultaneous examination of how scholars in formerly peripheral parts of the world attempted to use dramatic finds to promote their authority and build wider links, and how research on human origins interacted with wider debates on science and human nature in a single metropolitan context. These were very much interlocked processes, which allow a combined examination of changing international connections, the conceived place of science in society, and debates on race, culture and development.

The story of the discovery of Peking Man at Zhoukoudian in north-east China in the 1920s and 1930s, where an international set of scholars in what had previously been a scientific backwater generated some of the most sensational discoveries of the period, has been told many times, becoming part of the disciplinary mythology of palaeoanthropology.[3] That the fossils mysteriously vanished during the Second World War has added to the drama, but ensured that most studies have revolved around the mystery of 'Where is Peking Man?' While there has recently been growing interest in the perception of Peking Man in twentieth-century China,[4] the contemporary international impact of Sinanthropus – as it became hailed as 'The Most Valuable Skull in the World'[5] and 'Possibly the Lowest Man Known to Science'[6] – has been largely unexplored. Yet the way in which its discoverers sought to gain publicity, recognition and backing for the finds offers a means of investigating the strategies which could link the local and the international in early-twentieth century science, and the frictions and barriers this could run up against. As recently argued by Fa-ti Fan 'for anyone who is interested in figuring out how cooperation, competition, and negotiation in modern science worked, it should be clear that Republican China … allows one to examine how the institutions of modern science functioned and how scientific knowledge was produced locally and yet aimed to speak globally.'[7] The unearthing of Peking Man, possibly the most dramatic

scientific project of the Republican period, and working within a discipline where the local and the global were fundamentally interconnected, throw these processes dramatically into relief.

The presentation of Peking Man in Britain was no less striking. It allowed established metropolitan authorities to bolster their positions and extend their networks, while feeding into a broader pondering of human origins and the expanding role of science. This connects with important, although still growing, areas of modern British historiography. It is now widely acknowledged that scientific 'values' played a key role in the society and culture of interwar Britain. However, this tends to be presented in a confusing and multi-headed manner. Science is simultaneously interpreted as offering regeneration to a nation fraught by war and economic trauma, feeding pessimistically into a prevalent 'morbid culture', simultaneously raising awe and trepidation at wondrous new technology, causing fears of 'moral lags' between technological advancement and human consciousness, bolstering a 'common context' valuing stable development, or being unevenly and rather problematically popularized.[8] While it is certainly the case that 'any history of national life that fails to work through the manifold ways natural science was part of the culture … fails to engage with the expression of central values of the age,'[9] the tensions within this, simultaneously offering optimistic images of progress and pessimistic ones of danger and decline remain important to investigate.

In a period when considerable ambiguities existed over conceptions of the place of science within society, the position and character of international networks linking Europe and the wider world, and human nature, progress and development, discussions like those on Peking Man became sites of complex negotiation on theoretical and practical levels. In this, there was no overall agreement, but instead a series of attempts to negotiate tense and shifting areas. On the one hand, this still saw the persistence of deferral to metropolitan and patrician authority, commitment to progressive directional models of human development, and the use

of human origins research to explain the fundamental qualities of human nature. However, this needed to be reconciled with uncertainties – the questioning of the authority of the scientist and the metropolitan centre, the rise of more complex relativistic branching developmental ideas, and ambiguities and contestations over what early human types could really show. These interplayed across both the conceptualizations of the earliest periods of human ancestry and the role of scientific knowledge in the modern world. Reflections on the excavation and analysis of Sinanthropus seemed to show that human development had in at least some respects been a story of evolutionary advancement, and that science could be an exciting, dynamic and improving force. However, this constantly interacted with the uneasy – and potentially horrific – implications of what seemed to be unveiled about the original state of humanity, and doubts over the claims and ability of science to further the progress that was seen as so necessary. Yet this was not a debate between two starkly opposed positions. These notions, and the interplay of optimism and pessimism, and certainty and uncertainty, were refracted continually across the discussion of the Sinanthropus.

## Palaeoanthropology in Britain

By the 1900s, the idea of human antiquity and evolution from lower primates was well established. It was not only scientific journals like Nature or the developing 'popular science' media which reported on palaeoanthropological research, but major newspapers such as The Times and The Guardian, and the burgeoning tabloid press, including the Daily Mirror and Daily Mail. Human evolution – a respectable scientific field which provided sensational images of cave-dwelling man-apes living alongside prehistoric beasts – could cut across a key tension in the contemporary media, as it debated whether the press should emphasize

improving and informing or entertaining society.[10] The weekly Illustrated London News was particularly active, producing numerous evocative reconstructions of prehistoric life from the 1890s onwards.[11] Presentations of human evolution spread widely beyond this: cave-men and dinosaurs entered the cinema in a highly successful adaptation of Arthur Conan Doyle's The Lost World in 1925; a (rather unappealing) family of Neanderthals from Chicago's Field Museum were exhibited in Madame Tussauds in the late-1920s;[12] and the 1936 Chelsea Arts Club Ball had a 'prehistoric' theme, with stone age dioramas alongside centaurs and ancient Egyptians. This was a period when 'cave-men joined monkeys, apes, and other missing links in a crowded symbolic vocabulary,' becoming tied to meditations on animalistic origins and the progress of culture and intelligence.[13]

Peter Bowler's statement that it 'was easy to generate public interest in this topic, and the regular discovery of new hominid fossils ensured that there was always a peg upon which to hang another account of the factors that might have shaped human nature'[14] is certainly accurate. However, this interest coexisted with significant uncertainties, which can be shown through a quick discussion of the principal known hominid forms. The first, 'Neanderthal man,' had been discovered in 1859 and (after slow acceptance) became the most emblematic and well-studied 'cave-man.' Yet while almost fifty specimens of this Ice Age hominid had been discovered by 1930, debates still raged over whether its peculiar morphology showed it to be a degenerate unrelated offshoot to modern man or a primitive evolutionary precursor. This ensured a 'pendular movement between humanity and bestiality, between recognition and exclusion,'[15] as the Neanderthals moved in and out of ancestral status.

Neanderthals were controversial, but also too recent to be regarded as the deepest possible ancestor. For this, there were two primary yet problematic contenders, dating to the beginning of the Pleistocene. Eugene Dubois' skullcap and femur of Pithecanthropus erectus, discovered in 1891 in Java, was initially interpreted as an early human-like creature, upright if rather bow-legged, with a 950cm$^3$ cranial capacity (midway between chimpanzees

and modern humans) and scowling brow-ridges. However, the controversy over the find caused Dubois to retract his Haeckelian 'upright ape-man,' reinterpreting it as a unique form distinct from both anthropoids and hominids, before locking the bones away in his house. This made further studies difficult – even as discussions of the Pithecanthropus persisted, and slowly became more amenable to its hominid status.[16] While lack of access made Pithecanthropus problematic, the opposite issue marked Eoanthropus dawsoni, or 'Piltdown Man,' discovered in Sussex in 1912. While known today as the 'most famous scientific forgery of all time,' in the interwar period Piltdown Man was an important emblematic specimen. Its primitive ape-like jaw and modern human cranium gave credence to brain-centered views of evolution and a possible British seat of early humanity.[17] However, Piltdown Man was also significant for being the first widely publicized media hominid, making the front-page of The Illustrated London News,[18] and driving a lively discussion in the contemporary press, which drowned out the harsh criticisms from European scholars.

The wide-spread, fragmentary records and lack of accurate dating techniques beyond relative geological chronologies ensured that conclusions were often tentative and debates heated. Public reactions to this lack of certainty could be mistrusting and frustrated. The Daily Express in 1926 noted that:

> I have been wondering how long the British Association at Oxford would be able to carry on its discussions without bringing in our dear old friend the Skull, and all the jum-jum stuff about Neanderthal man. 'One cannot speak definitely, of course, about his age.' Aha! The old story. Then, for heaven's sake, don't let us speak about its age at all, and don't let us start all the solemn nonsense of pretending we know all about it, and reproducing pictures of hairy men at random.[19]

The press was far from fawning over the scientific expert, who was as likely to be regarded as a pompous and obscurantist charlatan as an authoritative master of knowledge. Human evolution was obscure and specialist, utilizing complex Greco-Latinate terms and reading from mysteries of bones. To some extent, the public interest drew from this evocative obscurity, but still needed translation.

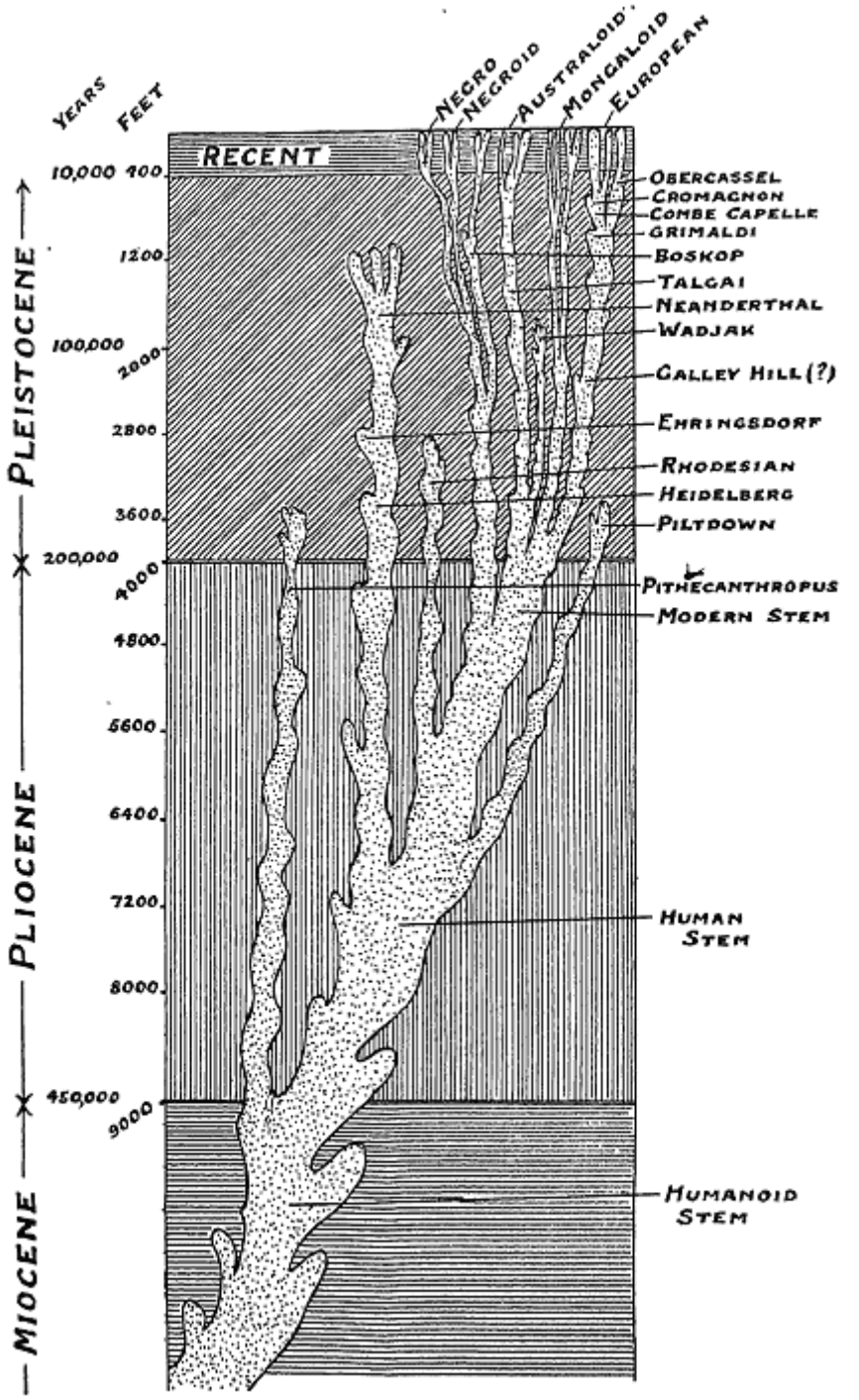
Accounts of human origins therefore depended on balancing appealing novelty and mystery, mixing authoritative rhetoric with links to familiar assumptions. Those who managed this gained authority to speak not only on ancient hominids, but wider issues of race, culture and humanity. The diverse means of building a public career in palaeoanthropological expertise are best shown by the two dominant figures of this generation: Arthur Keith and Grafton Elliot Smith – who will play a key role in the discussion of the Sinanthropus in Britain (and more widely). Arthur Keith is probably the most well-known – with assessments tending to highlight his harsh racial views.[20] An anatomist by training, who rode the publicity around the Piltdown specimens to become the point-man for the press whenever they required a digestible discussion of new fossils and the track of human development, 'Sir Arthur' (knighted in 1921) used this position to promote his ideological mix of biologist materialism and conservative pessimism. For Keith, studying man's early ancestry drew researchers 'not to a single sunlit idyllic glade, as in former descriptions, but to dank and dark caves,'[21] and showed dark, primeval forces at work in human nature. Humans were evolutionarily conditioned towards tribal affiliation based on blood, territory and descent, and antagonism towards rival groups. While Keith's precise definitions of the 'race-building' which resulted shifted throughout his career, a narrative core persisted: in the dank and dark Pleistocene past, humans were divided into innumerable races, who exterminated one another until only a few remained. This continued into the present, where nations were races in embryo, struggling like multi-celled agglomerates over resources and space – and the 'New Nations' of post-war Europe and the National Socialist regime in

Germany showed this was an active process. Dark forces permeated human society, and could not be eradicated. Science however offered a chance of managing these, ensuring fitness and health and, in the modern world with its destructive warfare, potentially restraining them.

Grafton Elliot Smith meanwhile followed a different track.[22] Born in New South Wales, he pursued an imperial career to become Professor of Anatomy first at Cairo, then Manchester and finally University College London, where he wrote and lectured for general audiences on neurology, psychiatry, anthropology and palaeoanthropology. Elliot Smith merged these varied interests into an idiosyncratic, but cohesive, vision of human development, which was almost the opposite of Keith's. While humans were imprinted by biological evolution (and early prehistory saw similar exterminatory racial warfare), sociability, speech and culture led to a unique position. These evolved capacities permitted the mastery of nature and the creation of new social worlds. This enabled early humanity to live as 'the genial and happy child of Nature,' free of wants and violence.[23] However, the development of civilization, and especially the theocratic irrigation states of the ancient Middle East, put an end to this carefree existence, teaching men to work, be violent and submit to authority. As 'Man began to devise Civilization, he became entangled in the shackles of the theory of the State, which he himself had forged.' It was only with the Greek city states that new ideas of individual liberty could spread. The struggle was then on, as 'the history of the world has been a conflict between the rationalism of Hellas and the superstition of Egypt. It depends upon the human population of the world themselves which will win.'[24]

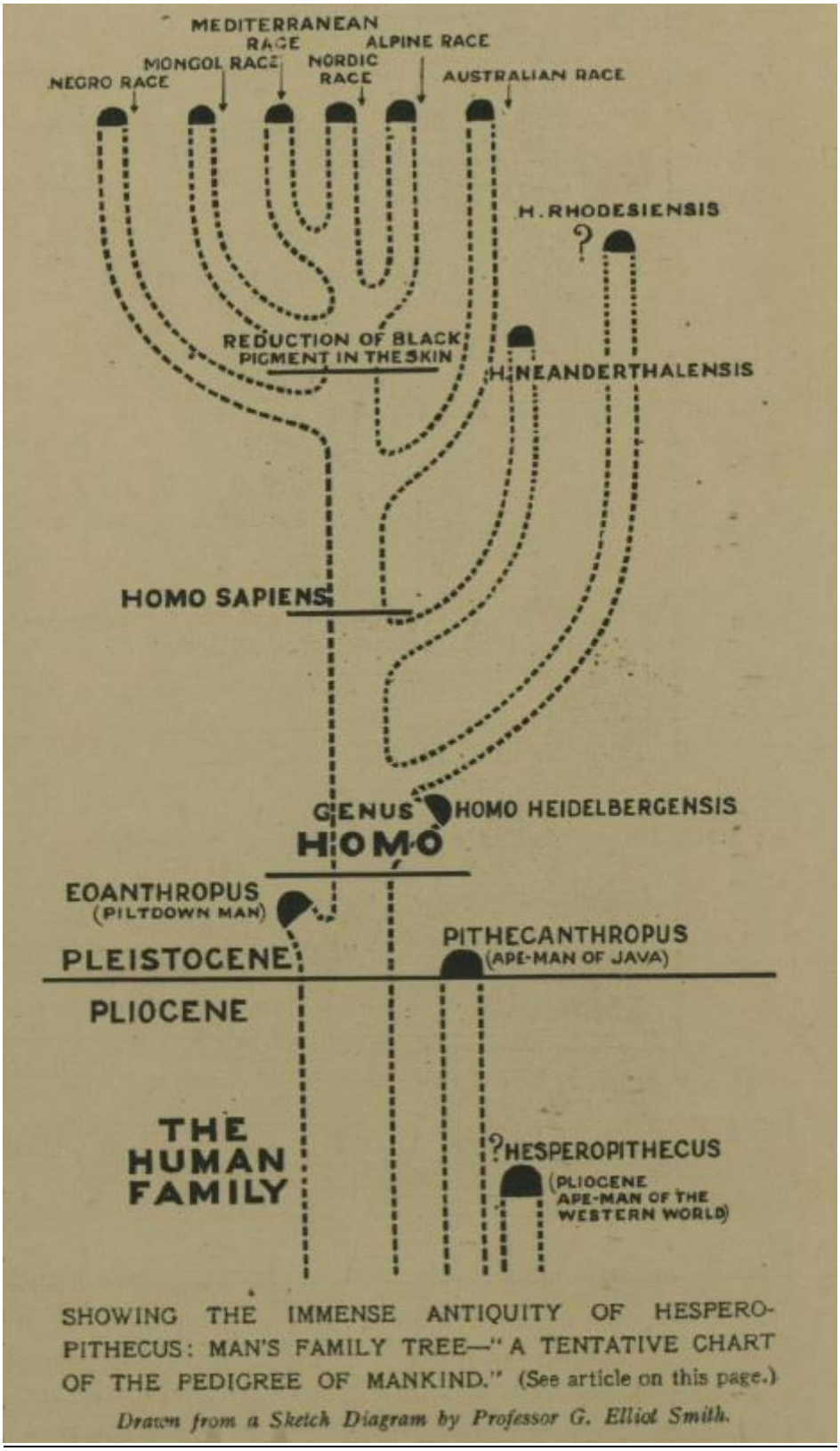
Given their starkly different ideological positions, extended contrasts between Elliot Smith and Keith have become almost obligatory in studies of human origins research and racial theorizing in interwar Britain.[25] However, it is important to note that beneath their often public disagreements and differences in political content, they shared a common vision of the structure of human development. Both were part of a move away from the formerly

dominant linear notions – promoted by earlier authorities like William Sollas, John Lubbock and Gabriel de Mortillet – which presented physical, mental, cultural and racial characteristics moving in unison up a ladder of evolutionary perfectibility.[26] By the 1920s, faced by the increasing variety of hominid specimens and wider shifts to relativistic models of cultural and racial pluralism, evolutionists 'had to give up the single-stemmed family tree and substitute for it one with rather a shrub-like outline.'[27] A common imagery developed of trees of human life, showing the hominid stems branching from the other primates, and continuing to diverge up to modern racial forms.[28] These budding presentations mixed ideas of progress with misdirected development. The branch leading up to modern humans could (and often was) presented as a continuous story of progress, marked by loss of primitive features and the balanced development of the brain and cultural capacities. However, extinct types, like Neanderthals and Pithecanthropoids, were shown as dead-ends on isolated sub-branches, and too distinct to have led to modern man.[29] Likewise, the invariable inclusion of modern 'racial groupings' at the culmination of these models tied palaeoanthropology to contemporary controversies over racial divisions. On the one hand, this seemed to demonstrate that the differences between them were nowhere near as great as between modern humans and extinct hominids. Yet it also implied that modern racial types were engaged in the same process of divergence and struggle as had characterized the Pleistocene. Uncertainty over dating also meant that the divergence of racial types could be chronologically placed to either accentuate or minimise the variation between racial types: Elliot Smith preferred a relatively recent differentiation of human races in the mid-Pleistocene, while Keith, promoting a sharper racialist view, placed their origins much earlier, at the end of the Pliocene. In this way, scientific authority over evolutionism was used to define race and human development in a direct manner. Old views of evolutionary progress and clear hierarchies of types were retained as potential features of human development, but these could be stopped, curtailed or follow the wrong track rather than be inevitable.




Genealogical tree indicating the ancestry of living and extinct races of mankind. On the left are given estimated depths of the more recent geological deposits and of the time occupied by their accumulation.

Figure 1: Arthur Keith, The Antiquity of Man (London, 1925), ii, frontspiece.




SHOWING THE IMMENSE ANTIQUITY OF HESPERO-PITHECUS: MAN'S FAMILY TREE—"A TENTATIVE CHART OF THE PEDIGREE OF MANKIND." (See article on this page.)

*Drawn from a Sketch Diagram by Professor G. Elliot Smith.*

Figure 2: Grafton Elliot Smith, The Illustrated London News, 22 June 1922.

## Scientific Connections between Britain and China

While palaeoanthropology was becoming part of intellectual and public life in early-twentieth century Britain, the wide spread of finds – in Asia and Africa as well as Europe – inspired a global perspective. Within this, it is essential to ask why did 'the eyes of the world turn to China' in the 1920s, and how did pre-existing scientific and political linkages impinge upon this? British relations with China in this period were complex and shifting in an awkward manner, as positions and interpretations which had built up over the nineteenth century were slowly unraveling. There was a long tradition of British naturalist activity in China, frequently tied to networks of informal empire and commercial dominance.[30] British scientists and scholars continued to be active in the early-twentieth century, particularly around institutions such as the Royal Asiatic Society and Shanghai Museum of Natural History. However, in many respects, their position reflected British influence in China more generally: still in place, but declining from a formerly dominant position in the face of foreign rivals and a dynamic local context.

Most significant was a new generation of Chinese scientists. Young, usually western educated, intellectuals within the Republican movement saw the need to 'To Save China through Science and Democracy,' rejuvenating a country which was seen to have suffered through a century of wars, political instability and humiliation, while seeking to speak on both the national and international stage.[31] As Grace Shen has recently shown, a central role was played by geology.[32] This was a science which combined eminent economic benefits (being essential for mining, quarrying and railway-building), physical exertion (with geological sites only reachable through arduous walking in difficult terrain), and connections with other sciences, particularly palaeontology, natural history and archaeology. It also allowed Chinese scientists to make a unique global contribution, as the geological and palaeontological records

of east Asia were almost unknown. The Chinese Geological Survey of 1917 and the Geological Society of China in 1923 were among the first scientific bodies established consisting primarily of Chinese scholars. They went out of their way to connect to international networks, in which Britain was an important destination: Ding Wengxiang, the first director of the Geological Survey, had studied in Britain, although dropped out of Cambridge after finding it too classically-orientated, to gain a more practical education in Glasgow.[33] However, this was not the only international route: Wong Wenhao, director of the Survey from 1926, was educated in Louvain in Belgium, and the palaeontologist Yang Zhongjian gained his doctorate in Munich. Likewise, for field collaboration, Swedes, Germans and long-term émigrés were preferred: Johan Gunnar Andersson, a Swedish geologist with strong interests in archaeology, was employed in various capacities from 1914;[34] and Amadeus Grabau, former Professor of Geology at Columbia before being forced out of over apparent German sympathies during the First World War, was hired by Peking University in 1919 to educate geologists within China.[35]

This expanding Chinese context was paralleled by the rise of American institutions. The most prominent was the Rockefeller Foundation, which also sought to 'save China through science' using more paternalistic medical institutions.[36] Its crown-jewel was the Peking Union Medical College, one of the largest and best-equipped medical schools in Asia. While it had a very clear remit for medical research and training Chinese doctors, it offered local resources which could be co-opted by those with specialist interests. Especially significant was its Canadian head of anatomy, Davidson Black, who had studied with Grafton Elliot Smith at Manchester, and worked with Arthur Keith at the Piltdown site.[37] Black used his 'extracurricular' interests in physical anthropology to connect with the networks around the Geological Society and divert resources from the Rockefeller Foundation. Not only was he the local expert for the analysis of human remains found in excavations, but he also produced a long article on 'Asia and the Dispersal of Primates' in 1925,[38] which served as a

research statement for the Geological Society's growing interest in human origins. This utilized American works such as William Diller Matthew's Climate and Evolution and Grabau's idiosyncratic theories of continental movement to argue that Central Asia was the centre of dispersal for the major primate groups, and the prime area to search for human origins – something which significantly furthered the importance of Chinese science for global knowledge. The ways in which this bound together can be seen in his grant application for a trip to Thailand in 1922:

> Reflections upon human origin and evolution have ever been of profound interest to thoughtful men in all walks of life, but particularly does this problem interest the medical world and it should be the duty and privilege of workers favourably placed in the East as we are to do their utmost to advance our knowledge in this field. …
>
> We must look more and more to the Chinese themselves if we are to expect real advances to be made on the fundamental problems involved in the investigation of man's early physical records and in the working out of his family tree – questions which are of practical importance to the whole world. But unless an example be set which will fire the imagination and capture the interest of our student body we may expect to look in vain for the type of workers needed in this field.'[39]

Human evolution was thus a locus of scientific cooperation and a means to 'fire the imagination' towards science, and able to build networks across disciplinary, institutional, cultural and national boundaries.

Figure 3: Davidson Black (1884-1934) [RAC archive]

Yet while the Chinese geologists and expatriate scholars were working within these discourses of internationalism, unification and modernization, they also had to interact with wider stereotypes and entrenched representations. The contemporary British press in particular, while intensely occupied with Chinese affairs, operated within set formulae: any reports from China were refracted through expectations of dirt, the 'yellow peril,' cruelty, backwardness, and the inscrutable Oriental.[40] However, these co-existed with an unevenly developing appreciation of the country's struggles to overcome 'traditional backwardness' and build a progressive national community. The accounts from China in the 1920s oscillated between tales of banditry, political instability and the atrocious lives of the leading warlords, valuations of local drives towards modernization and improvement, and developing interest in Chinese exoticism. Global hierarchies and power relations were built into these representations, simultaneously conditioning the way in which scientific research in China was presented to the world, but also acting as a spur to scholars on the ground to overcome these stereotypes.

This is emblematically expressed in a particular cultural interaction which made (and still makes) its way into all narratives of palaeontological work in China: the long tradition of using the fossilized remains of Pleistocene mammals in medicine under the name of 'dragon bones' and 'dragon teeth.'[41] Not only did this draw the clear opposition between the new progressive science and traditionalist ignorance – leading to the literal consumption of scientific objects – but it also had significant implications for research. From the 1900s, numerous western geologists and palaeontologists purchased 'dragon bones' from Chinese apothecaries, and by the 1920s these same scholars were unearthing the dragon-bone sites themselves, invariably with Chinese assistance. One of these sites, Zhoukoudian in the western hills close to Peking, was excavated by Andersson and his Austrian colleague Otto Zdansky in 1921, turning up a range of early Pleistocene material, including rhinoceroses, hyena and deer. This was largely forgotten about, until a carefully choreographed symposium

held on 26 October 1926 in honour of the Crown Prince of Sweden's visit to China, attended by representatives of the major local scientific and press institutions. At the close of the meeting, Andersson revealed that a tooth, discovered by Zdansky in the earlier dig, seemed to have belonged to a human-like creature.[42] The remains of the animals demonstrated it was from the earliest period that any human specimens had yet been found – only Piltdown man and Pithecanthropus were of comparable antiquity. Following the collaborative local networks, Davidson Black classed it as human, but distinct enough to constitute an entirely new genus – named (on Grabau's suggestion) Sinanthropus pekinensis.

This could claim to be a major stir, although the international reaction was cautious. Reading 'the hieroglyphs of teeth'[43] was a long-standing feature of palaeoanthropological research, owing to the durability and distinctiveness of human dentition. However, it was also problematic. Dental analyses were contestable, and constructing a new genus on the basis of a single tooth was risky. Additionally, faith in scientific ability to make these pronouncements had been considerably deflated by an even more well-publicized tooth from North America, judged by Henry Fairfield Osborn of the American Museum of Natural History as providing evidence for Hesperopithecus, or 'Nebraska Man.' The Illustrated London News devoted a double-page spread to this 'Ape Man of the Western World,' alongside a fairly credulous article by Grafton Elliot Smith.[44] However, in 1927, the museum publicly retracted the find: The London Times ran the story 'Hesperopithecus Dethroned: Only a Wild Pig,' as the tooth was revealed to be that of an ancient peccary.[45] The idea that clever scientists could reconstruct entire species from small fragments was dealt a major blow.

The claims for the tooth were thus a major gamble – although one which needed to be taken to gain resources and draw together the networks. After a project to explore the Tarim basin in cooperation with a Swedish consortium fell through, the Rockefeller Foundation and Chinese Geological Survey agreed to organize concerted excavations at Zhoukoudian, with laboratory support from the Peking Union Medical College. This was

carefully managed from the outset. While the bulk of the funding came from the Rockefeller Foundation, the initial contract stated that 'all the specimens including the anthropoid material are to be the property of the Geological Survey and to remain in China,'[46] and that findings would appear first in the journals of the Geological Survey and Society. This ensured that Chinese publications could gain new international importance, and that reports to the international press could be timed effectively, with information only released when it had clearly been established. This was crucial owing to the controversial nature of the finds, contested state of the field, and the relative standing of Chinese institutions within the international scholarly community. Discoveries needed to be presented as tightly and cogently as possible.

This internal discipline was combined with a strong international defence. While Zhoukoudian was being excavated, Black undertook a tour of Europe and North America, acquiring training and cultivating supporters.[47] Expectedly, an important role was played by his mentors, Grafton Elliot Smith and Arthur Keith. Both ran strong defenses in favour of not only the tooth's authenticity, but also the problematic issue of the genus. They in turn benefited from access to news and reports. Black wrote how:

> [Arthur Keith] was convinced after my demonstration in London that Sinanthropus was a real guy, still this new stuff was just what was needed to convince the 'unbelieving Devils'. He wanted to know if I could let him have advance information and pictures so he could incorporate the dope in the new volume of the Antiquity of Man he is getting out. I have spoken to Ting and Wong about this and both agree it is a God-given opportunity to advertise so I am going ahead on this idea.[48]

In this way, the controlled release of information to privileged supporters and management of personal links built a cohesive front against opponents, rivals and questioners of the new discoveries.

Black's advertising for the genus was largely confined to the scientific networks. For it to reach larger audiences, more substantial pieces of ancient hominid were needed. The significant developments occurred in late-1929. Firstly, in September, a jaw was discovered, resulting in much press attention. The Manchester Guardian's Peking correspondent, Harold John Timperley, featured a self-defined 'dramatic account' around Birger Bohlin, the Swedish overseer (conspicuously failing to take account of the team of sixty Chinese workers at the site):

> Dr. Bohlin had worked alone at his excavations for six months without finding a single trace of the human remains he was seeking. Civil war was in progress not far away, and the rumble of artillery could be heard above the noise of the picks. Soldiers roamed over the countryside in search of loot, and Dr. Bohlin had been instructed by the Survey authorities to give up and return to his base at Peking.
>
> But the young Swedish scientist was not to be beaten … his doggedness was rewarded by the finding of the tooth which since has made him famous in the scientific world. Time and again during the long 25-mile rickshaw ride back to Peking curious soldiers stopped him and asked what he was carrying, but he got through at least with the precious fragment, delivering it personally to Dr. Davidson Black at the Rockefeller hospital.[49]

Science was linked with danger, commitment, personal risk and ingenuity, as the dedicated western scholar overcame the dispiriting work and difficulties of the native situation. The find itself was no less dramatic. Some well-established specimens, such as Heidelberg Man,

were known only from a single mandible, and many interpretations of the Piltdown specimen revolved around its 'ape-like' jaw. It was also an important index of development: one of the prime posited human evolutionary trajectories (particularly in Britain) was that the jaw receded as the growing brain pushed it backwards and implements took the place of biting teeth. This jaw did not disappoint, being classed as highly primitive, but not as strongly developed as the Piltdown specimen. Therefore, it was a convincing precursor within the contemporary evolutionary idiom. The Illustrated London News used this to present a full reconstructed head of Sinanthropus as a 'New Link in Human Evolution,' third in-line alongside a chimpanzee, Pithecanthropus, and Piltdown Man.[50]

The only thing more exciting and indicative than a jaw-bone was 'our friend the skull,' and one was found in December by Pei Wenzhong, a Chinese field technician at the site. While there were some hiccups in the publicity, with news being leaked a week ahead of schedule to The Guardian,[51] and Nature managing to garble the story by reporting that ten headless individuals had been discovered rather than a single cranium, this was largely forgotten when the skullcap was unveiled at another public symposium in Peking on December 31. Crucial to this was exciting mystery over what it would reveal: The Times reported that it was 'still largely embedded in hard travertine, which will require a couple of months of difficult and delicate work to remove.'[52] The Guardian continued with stories of diligent expertise: 'the removal of the rock in which the skull is embedded is a delicate task calling for the skill and dexterity of a dentist.'[53] Davidson Black was quickly taking on the role of the ideal scientist:

> Interviewed in his 'workshop,' as he terms the Cenozoic Research Laboratory … Dr. Black drew attention to the evident frontal bulges, which suggest that Peking Man distinctly had the advantage of his Java neighbour in the matter of intelligence. There is every reason to suppose, Dr. Black feels, that Peking Man

> possessed that capacity for reflection which sets man apart from the rest of the animals further speculation as to his mental development must be postponed until the inside of the skull has been examined and the brain content actually measured.[54]

Technical care, expert knowledge and (moderated) interpretation of the mysteries of the brain all shone out from this work, which promised to offer unprecedented insight into the mind of primitive man.

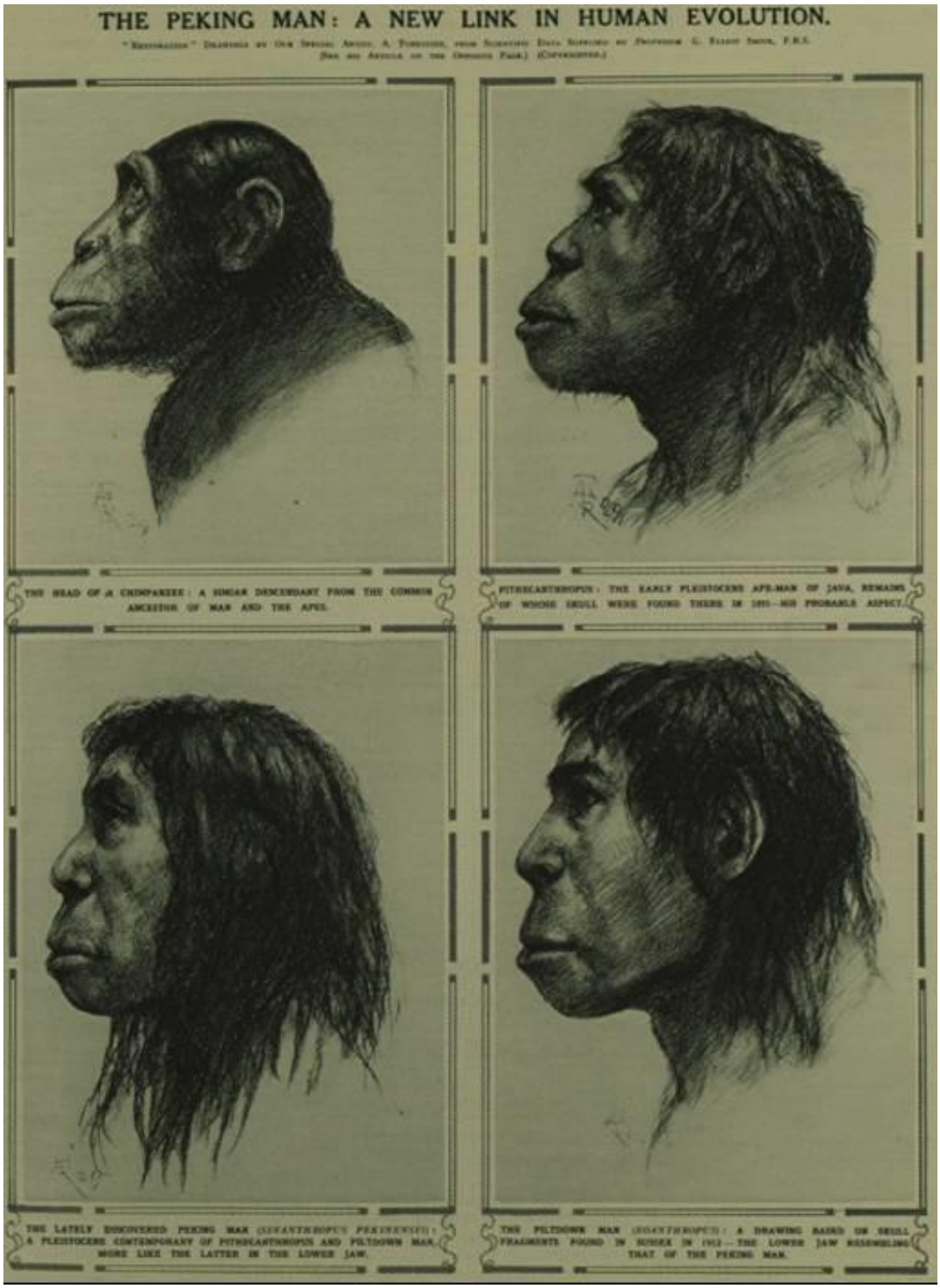
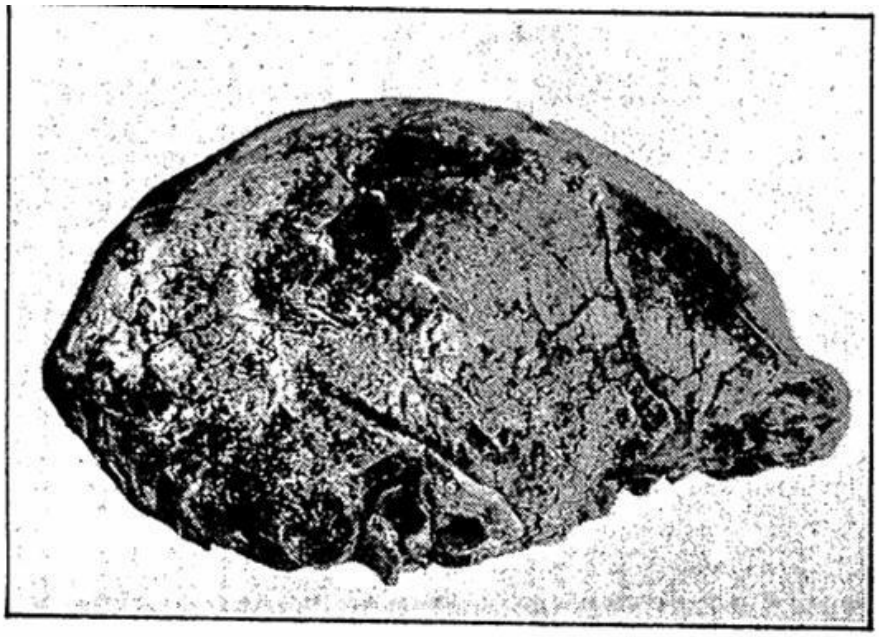



Figure 4: The Illustrated London News, 29 Oct. 1929



PEKING MAN.—The discovery at Choukoutien in December last of a skull of the fossil man of Peking is described by Professor G. Elliot Smith in a letter on another page as probably the most important contribution to our knowledge of early Pleistocene Man that has yet been made. A photograph of the right side of the brain case.

Figure 5: The Times, 16 Apr. 1930

QUEST OF THE MISSING LINK.—Dr. Elliot Smith left London yesterday for a cave near Peking, where bones have been found which appear to connect the Java ape man and the Piltdown man. *(Centre)* The reconstruction of the Peking man, who is estimated to have lived a million years ago. *(Left)* Reconstructions of people of the Neanderthal period, 50,000 years ago.

Figure 6: The Daily Express, 15 Aug. 1930

The importance of the find was emphasized when Grafton Elliot Smith himself traveled to China in 1930 to place his stamp of authority on the site and the specimens. The Daily Express went so far as to feature a portrait of Elliot Smith accompanied by the Field Museum Neanderthals, under the evocative title 'Quest for the Missing Link,'[55] casting UCL's aged Professor of Anatomy as a dashing global adventurer. On his return overland across America, 'carrying the flaming cross for the Survey and Sinanthropus,'[56] he delivered lectures in Chicago, New York, London, Manchester and Edinburgh, proudly displaying his cast of the now famous skull and recounting his 'mission of ancestor worship in China.' He praised 'the organizing ability and tact of Dr Wong Wen-hao, the Director of the Geological Survey, who in the face of immense difficulties, which were intensified by the economic and political circumstances in China, has maintained the work in the field and in the laboratories and secured prompt publication of the results,' and spelt out the significance of the site.:

> The brain-case found by Mr W C Pei at Chou Kou Tien … is the most significant and illuminating relic of primitive man ever recovered … As all these fossils belong to the same geological epoch, the Lower Pleistocene, there can be no doubt of the age of Sinanthropus … the discoveries in China were due not to the happy chance of one inspired individual finding a fossil and appreciating its significance. Sinanthropus has been made known to us as the outcome of a comprehensive search extending over several years, in which a team of investigators of different nationalities participated[57]

Elliot Smith's characterizations and the united front at the site were aimed at both the scientific community and the broader public to forestall any criticisms of method, emphasize the role of local scientific organization, and frame these in the most dramatic terms possible. This not only showed the authenticity of the discoveries, but also what science ought to be:

methodical, international, adventurous, and overcoming adversity. However, it still maintained and drew from established hierarchies. Not only were the principal researchers western – with Chinese only presented in subordinate excavatory and organizational roles – but pre-existing stereotypes of the 'mystic east' and local warfare remained crucial to the presentation. This grew from the genre. It was essential that science be made as exciting as possible, presenting a narrative which 'reads like a detective story – a story in which a large army of detectives set themselves to track down from inadequate clues a non-existent criminal,'[58] and not the speculative 'jum-jum' of the greybeards at the British Association.

## The Significance of Peking Man

If the excavations themselves represented the best manifestations of contemporary science, what did Sinanthropus him- (or less frequently, her-)self represent? Was it human, an ancestor, 'the missing link' or yet another 'failed experiment'? As was always the case in human evolutionary studies, the answers operated within set motifs. A sophisticated literature has developed on the strong mythic implications often underpinning palaeoanthropological models. Wiktor Stoczkowski and Misia Landau have discussed the prevalence of conventional narratives of triumphs over the environment through technology and 'hero's journeys' through bipedality, leaving the trees, tool-use and sociability, all with connotations of golden ages and natural innocence, or (conversely) innate savagery and violence.[59] In the varied accounts of Sinanthropus, these motifs can often be seen, but played a secondary role to uncertainty and general reflection on human nature. The interpretation of this form, and its placement alongside both other hominids and modern humans, seemed to

raise far more questions than it answered, and it was this mysterious character which was central to the interest it generated rather than any ability to present myths of origin.

The broad interpretation of the skull and jaw were: hominid teeth set in a primitive jaw; heavy brow ridges; unusually thick skull-bones; and a brain-case of around 1000cm$^3$ – above that of Pithecanthropus, and just below the lower limits of human averages. In the initial reports, Black compared Sinanthropus with a range of specimens (although notably not the Piltdown skull), identifying similarities with Dubois' Pithecanthropus, but noting that the larger brain and more developed teeth showed it as 'the much more generalized and progressive type.' It was classified as 'pre-Neanderthaloid', owing to similarities in the thickness of the bones and size of the brow ridges. Owing to the wide knowledge of Neanderthals, this was the least controversial and most familiar possible interpretation. Yet placing the creature on the Neanderthal 'stem' had other implications. By the 1930s, the 'pendular' interpretation of Neanderthals was swinging to regarding them as brutish, shambling extinctions. As such, while Sinanthropus 'could not have been far removed from the type of hominid from which evolved both the extinct Neanderthaler and the modern Homo sapiens,'[60] it was still on a branch which did not lead to modern man.

This raises the point that – after the gamble of the tooth – the scientists on the ground were often quite cautious. Black, the international face of the excavations, was certainly willing to publicize the specimen and receive the appropriate accolades: Royal Society election was engineered by Keith and Elliot Smith in 1932, and he delivered the Society's Croonian Lecture in 1934. However, he was always quite moderate in interpretation. He wrote to his superiors that:

> Yes, Sinanthropus is growng like a bally weed. I never realized how great an advertising medium primitive man (or woman) was till this skull turned up. Now everybody is crowding round to gaze that can get the least excuse to do so and it

gets embarrassing at times. Being front page stuff is a new sensation and encourages a guarded manner of speech![61]

The scholars in China were aware of the significance of their discovery and level of interest it could generate, but became reluctant to make grand claims. Their status was built through the productivity of the site and management of news and material, which gave them control over access, information and specimens.

However, this was not the case with the metropolitan scholars. When presented with casts of teeth and skullcaps, they worked these into their pre-formed narratives of human development. British journals continued to feature critical foreign authorities, such as Aleš Hrdlička and Eugene Dubois, who rejected Sinanthropus as a dwarf Neanderthal.[62] However, these were elbowed out in more popular reporting, which focussed on direct news from the site or interpolations from Keith and Elliot Smith – who both rushed to cash in on the discovery. Elliot Smith produced a cheap volume on The Search for Man's Ancestors in 1931, 'dedicated to Davidson Black, in whose genial society the author first visited the three sites (Piltdown, Java, and Peking) with which this book is concerned.'[63] He saw Sinanthropus as an intermediary between the 'degenerate' Pithecanthropus and the later Piltdown Man, thereby filling a crucial gap in the evolutionary record, and bolstering his notions that human evolution depended on the steady growth of the brain. Keith meanwhile in New Discoveries Relating to the Antiquity of Man heralded the discovery as 'one of the most important events which have marked the opening-up of man's early history.'[64] He placed Sinanthropus at an important basal position within his bushy outline of human evolution, 'already human in size of brain but showing a strange mix of characters, both old and new, in jaw and tooth.'[65]

More popular reports tended to present Peking Man as more mysterious, particularly drawing on the persistent lack of clarity over the time and place of human origins. The geological era – early-Pleistocene – meant little to the broader public, and suggested dates

varied between 100,000 and two million years. This uncertainty allowed picturesque details to colour the reporting, with speculation that Sinanthropus was a 'desirable tit-bit for his neighbours the hyena and sabre-toothed tiger, who in those days made the Western Hills less attractive as a summer residence than they are to-day,'[66] and jokey contrasts that the cave-dwelling Sinanthropus had not 'reached at that time the "bungaloid" stage of existence.'[67] Yet more importantly, it allowed Sinanthropus to be presented as contemporary with the other earliest specimens, Piltdown man and Pithecanthropus. This linked to one of the key problems in palaeoanthropology: the location of the first steps in human evolution. Throughout the discussion, no-one suggested that Peking Man proved a Chinese origin for humanity. Sinanthropus was felt to be too advanced to be the earliest possible human precursor, and the wide spread of other specimens placed their common origins further afield. Elliot Smith wrote:

> The discovery of three such contrasted types at the beginning of the Pleistocene period on the extreme fringes, east, south, and west, of the vast domain of man suggests two reflections. Their common human ancestor must have lived long before them, in the Pliocene Period, to allow time for such profound contrasts to be developed. A variety of experimental types of the human family, grotesque caricatures of mankind, must have been roaming about in the heart of the great continent, working out the destiny of man, at the time when Nature was throwing the jetsam and flotsam of her failures into Java, Sussex and China.[68]

Arthur Keith noted that these types differed 'far more than the negro now does from the Chinaman,' which gave credence to his own idea of the 'extraordinary diversity of the races, species, genera of mankind which populated the world in Pleistocene times.'[69] Human development stretched into even deeper eras, and the true site of human evolution must have

been elsewhere. It was still the mysterious lands of Central Asia, or for Elliot Smith, the Middle East, which retained the greatest hold. On some levels this was down to the dispersal of finds: references and pictorial maps abounded of Eoanthropus in Sussex, Rhodesia Man and the contentious Taung skull in southern Africa (both discovered in the early-1920s), Pithecanthropus in Java, and Peking Man in China, seeming to demonstrate that the common point of origin must be in the middle. However, this also drew off the long-standing traditions of centers of dispersal, with inner Asia being the 'Garden of Eden' for mankind – as had been earlier presented in Black's depiction.

Despite these evocations of a multi-species human past, much of the public discourse revolved around Sinanthropus' possible status as 'the missing link.' In many respects – and contrary to the shifts in evolutionary thinking discussed earlier – the story of linear progression through tree-dwelling chimpanzee, shambling Pithecanthropus, generalized Sinanthropus and large-brained Piltdown Man was the more graspable and resonant narrative that many wanted to be told. However, while featuring frequently in media depictions, this was something which scientists and the more respectable press set out to correct: Elliot Smith wrote that 'it is premature to claim him as our ancestor or to apply to him the misleading term "missing link"'[70] and The Times stated that 'although not the "missing link" in the popular sense, the Peking man has been described by scientists here as a cousin to the dawn ancestor of man.'[71] Yet the fine differentiations of 'closer to the original type' were continually occluded. Not only did scientific uncertainty over the phylogenetic relationships between Pithecanthropus, Neanderthals, Piltdown Man, Sinanthropus and modern humans prevent definitive statements (thereby making it unclear exactly what the 'original type' was), but the models Keith, Elliot Smith, Black and others still saw the growth of the brain and loss of bestial features as the key trend in human evolution. Despite the bushy trees of human existence and refutation of the term 'missing link,' ideas of linear evolutionary progression could persist within them.

Attempts to reconcile these visions were widespread. The BBC, following its contemporary commitment to education and improvement,[72] featured Peking Man in a number of radio broadcasts. In 1932, John Baker gave a potted history of the find, discussing the germination of the research with Davidson Black, the 'momentous discovery' of the uncrushed skull by 'a Chinese geologist, Mr. Pei' and its publicization by 'Sir Elliot Smith' (who needed no introduction). Not only were the Java, Piltdown, and Peking skulls connected as 'the three missing-link skulls, though the term is, of course, no longer suitable,'[73] but a degree of audience participation was encouraged. Casts of the skulls viewable in museums up and down the country, but the listener was also told:

> If you put a finger on your head just above your ear, and move it across the top of your skull and down to the other ear, you will find that your skull is smoothly curved. The Peking skull is not smoothly curved like that. It has a distinct bump on each side opposite the part of the brain which is used for understanding spoken words, and another bump opposite the part concerned in using hand and eye together. This seems extremely significant. It looks as though man was just beginning to speak and use tools. As his brain swelled in the appropriate places, so his brain-case enlarged unevenly.[74]

This exercise in practical evolutionary neurology bridged the evolutionary divide, driving home how similar Sinanthropus was in brain structure and capacities, but also how unfinished and rough it was. The brain was fully formed in the self-enlightening radio-listener, but still struggling and raging in the early Pleistocene, swelling unevenly to reach true human status. Further contributions in this idiom were made by the Reverend Barnes, the controversial Bishop of Birmingham, who gave a sermon which was equivocal on the status of Sinanthropus, but not on what characterized humanity:

> Had Peking Man moral instincts? Did he strive to live by an Inner Light, however dim? If so, he was on the side of the immortals. If so, though the sub-species to which he belonged had passed from the earth, it was not unrepresented in the realm of God where nothing of value was ever wasted.[75]

The question – where humanity arose – was unanswerable. However, it did imply what humanity was: thinking, spiritual and progressive. The common thread was a search not for evidence of a primeval 'golden age', but the earliest glimmerings of human potential.

Interpretations stepped up a gear in late-1931, with evidence of fire and tools being discovered at Zhoukoudian. Early accounts had been careful to note that 'though thousands of cubic meters of material from this deposit have been examined, no artifacts of any nature have yet been encountered nor has any trace of the usage of fire been observed.'[76] This was important. These were crucial indicators of mastery over the natural world and capacities for creation and technology, building into the long-standing notion of Homo faber – 'man the tool-maker.'[77] Yet Sinanthropus had already been established as an ancient creature – living 'prior to the Ice Ages' at a low, almost half-ape, stage of development. The chipped quartz flakes were therefore so potentially controversial that they required the backing of an international authority – although in this case French rather than British, taking advantage of links in personnel and the longstanding French predominance in prehistoric archaeology. Pierre Teilhard de Chardin, a Jesuit working at the site, took several pieces to Henri Breuil in Paris, a world-renowned expert in palaeolithic artifacts, who, like Elliot Smith, visited China in 1931.[78]

Once 'the famous French palaeontologist' had publicly pronounced on the authenticity of the stone tools, these again were reported throughout the press.[79] For the Sinanthropus' supporters, the tools demonstrated more than anything else that it was 'truly

human.' Black aligned these with recently discovered collar- and wrist-bones to indicate that Sinanthropus was 'fully capable in view of his mental and physical organization of being the sole artificer of the cultural debris associated with his skeletal remains.'[80] The endocranial cast showed how 'the brain of this form was in all essentials a typically human one. It is further probable that Sinanthropus was right handed and had evolved the nervous mechanism for the elaboration of articulate speech'[81] Elliot Smith reinforced this in The Times:

> It is no longer justifiable to regard Sinanthropus or Pithecanthropus as subhuman, nor to assume that they lacked the attributes of vision and skill which are distinctive of the status of true men. The shaping of pieces of quartz to make tools bears witness to their manual skill, as the making of fire does to their intelligence and inventiveness. [82]

Language, intelligence and creativity were thus defined as the prime markers of humanity, and developed deep in the evolutionary past.

There was some resistance to these finds, although the reaction was more to relativize rather than controvert them. Arthur Smith-Woodward wrote how this gave credence to burned flints which had been discovered at Piltdown, and how 'the beginning of human arts, indeed, dates back to immense antiquity, before man had assumed his present form.'[83] The archaeologist James Reid Moir drew attention to his own discoveries of apparently much older artifacts in East Anglia, which indicated that 'at Chou Kou-tien there existed a people in a state of culture long superseded in other parts of the world, and that, even in those far distant times, there were "backward" races even as there are to-day.'[84] This was not a general position, with Moir's own findings being rather contentious, but a more significant related issue was that the tools had not changed throughout the long habitation of the site. This showed that a more important aspect of human culture – progress – was not present:

Sinanthropus 'lived in his cave for hundreds, perhaps thousands of years, with no sign of progression in knowledge or skill.'[85] Peking Man may have been a tool-maker, but he was not going to advance towards civilization, and was thus yet another dead-end in the trail to modern man, who was classed as much through drives to society and complexity as by the chipping of stone.

This was matched by the continuing uphill struggle in highlighting the Chinese contribution to the project. Bohlin had left in 1930, leaving the excavation entirely in Chinese hands (supervised largely by Pei Wenzhong and Yang Zhongjian). While Rockefeller organs presented this as an indicator of Chinese scientific adaptability, this only unevenly made its way into the British press. The Guardian reported rather patronizingly that 'the Chinese geologists and anatomists … control a large number of cheery and intelligent Chinese labourers, whose manner of life in this strange, bare country, we could study on the cinema screen to-day.'[86] And as late as August 1937, one Lieutenant-Colonel H. Smallwood (Retired), wrote a rather aggrieved letter to The Times:

> you credit Mr. Pei, of the Geological Survey of China, with the discovery of the Peking man, probably the earliest form of homo sapiens [sic] yet discovered. While anxious to give any credit that is due to Chinese scientists, I must point out that the Peking man was discovered by a Canadian, the late Dr. Davidson Black … Dr. Black's romantic discovery was described by him in London when he gave his lecture on the subject to the Royal Society. I think I may say that his election as a fellow of that most learned of all societies was a recognition of his work in connexion with the discovery of the Peking man.[87]

Through the necessity of cooperating and building links with the western networks, the Chinese contribution was obscured and relativized. Science still needed western expertise and

backing by the 'most learned' societies of the metropolis to be accepted, and while Chinese workers could be picturesque additions, the 'romantic' narrative required a western hero.

## Shifts & Splits

Discussions continued in the following years, but were marked by major changes in personnel, when Davidson Black died suddenly and unexpectedly of a heart attack in March 1934. The accounts were evocative. Elliot Smith wrote the obituary in The Times, stating 'one's feelings are apt to be swamped by the sense of personal loss of a man of exceptional generosity and loyalty. It is no exaggeration to say that he has done more for human palaeontology than anyone else.'[88] The Rockefeller Foundation lost no time searching for a replacement, sending representatives from their Paris office to Keith and Elliot Smith, as the two most qualified experts to offer recommendations. After a series of proposals, including Solly Zuckermann and the aged Frederick Wood-Jones, final support went to Franz Weidenreich, formerly Professor of Anatomy at Frankfurt, who had been forced out due to his Jewish origin following the Nazi takeover. While the initial plans had only called for someone to 'to clean up work already started, rather than for a man whose primary interest would be in opening up new work,'[89] further discoveries provided momentum to continue: by 1937 there were 14 significant pieces of Sinanthropus skull,[90] which presented an unprecedented range of specimens. An oft-repeated soundbite from Weidenreich called this 'the richest and most complete collection of human fossils ever recorded, unique in every respect.'[91]

However, connections with Britain became problematic. Weidenreich had been socialized within the German liberal tradition of physical anthropology of the 1890s and

1900s, and the debates he engaged with – Ranke's theory of pygmoid origins, constitutional body-types and complete rejection of Piltdown man – had no real parallels within the British context.[92] The scientific reports from Zhoukoudian therefore became less penetrable for British researchers. The networks were further disrupted when Elliot Smith died in 1936. So striking had been his role that the obituaries were headlined 'Peking Man Inquiry Made Him Famous.'[93] While this led to a brief upsurge in reporting on Zhoukoudian, it ensured that the supply of casts and stories to Britain – as had been such a feature of the Black period – dried up. The field researchers likewise built wider links: Weidenreich preferred to work with American institutions and other German expatriates; and when Pei Wenzhong went to Europe for his doctorate, he studied in Paris under Breuil.[94] While he visited Britain and continued corresponding with Keith, closer connections with European institutions were built.

When news did appear, it was presented in highly-charged terms, and the evolutionary story was tied to growing debates on human brutality and racial differences. Any valuations of Peking Man as an early tool-user needed to be contextualized alongside more grisly details: more and more skulls were discovered, but very few other bones were found. Many were also cracked and broken, and had apparently been fossilized in this condition. That 'we had found Peking man at home' was now becoming rather unseemly. The first long bone, a femur discovered in 1938, was described by Weidenreich as having been broken 'to extract the marrow, proving the practice of cannibalism by Peking Man, which was first suspected when it was noticed that all the skulls found had been broken as if to extract the brain.'[95] The question – human ancestors: masters of quartz and fire or disgusting cannibal savages? – seemed to ring out.

But there was not necessarily a contradiction here. Elliot Smith's models of essential human goodness were becoming less convincing in the light of a destabilizing global context. 'Baby-eating "Pekin Man"'[96] had lived in a harsh, cold, dangerous environment, beset by

saber-tooth cats and hyenas, and huddled in a dark cave for thousands of years, indiscriminately eating bison, horses, rhinoceroses, and its own fellows while filth and refuse collected around. It was the slow move out of desperate animalism and onset of progress which was the major characteristic of humanity, rather than any inevitable or clear set of steps forward. The developmental leaps, bipedality, language, fire, tools and settled habitation all seemed to have been developed far back in time. Yet human morality required more sustained progression, and was separate from technical mastery over nature.

While ascertaining cultural and moral linkages was difficult, biological connections actually became more frequently asserted. Here they became part of a sharpening discussion on race, as the rise of National Socialism and disputes over eugenics led scientists to engage in public controversies and formally take sides in intense political debates.[97] Palaeoanthropology, which had long claimed authority to define the origin and differences between racial types, was a strong part of this discussion, and Sinanthropus was marshaled for various positions. In contrast to earlier characterizations of Sinanthropus as a doomed extinction, Weidenreich emphasized notions of linear ancestry. Morphological links between Sinanthropus and modern Asian populations (among other features, both were seen to share 'the shovel-shaped incisor') indicated racial continuity from this deep past. A further important discovery was made at Zhoukoudian's 'Upper Cave' in 1933: a series of later skulls of anatomically-modern humans from the palaeolithic, accompanied by decorative items of teeth and shell, and stone and bone implements. There were two striking features. Firstly, they were judged by Weidenreich to represent a variety of racial types – Ainu, Melanesian and Eskimo. Secondly they all seemed to have died violently. The Times reported the story under the lurid headline of 'Stone Age Massacre:'

> All seven people must have met violent deaths, for their skulls were clearly damaged by both blunt and pointed weapons, while the scalp still covered the bone. ...

> Undoubtedly, says Dr. Franz Weidenreich, who is the authority on the Peking Man, Chinese existed in this area at that time, and these seven people may have met their deaths at their hands. [98]

As well as presenting this in the evocative idiom of the crime scene, this gave credence to notions of primitive racial warfare. However, Weidenreich used these to minimize the importance of the racial differences he had uncovered. The links between Sinanthropus and modern Asians did imply that human types had developed in particular locations. However, if peoples as diverse as Native Americans and Melanesians lived together in Asia at the time of the Upper Cave, this indicated that movement and exchange were also deep-rooted processes, and that human evolution saw the mixture of races down the ages. The differences between modern humans were therefore only differences in proportion of mixing, rather than radical differences in quality – a continuation of the models developed in the 1920s, yet now presented to an international audience and directed against the harder racialism in Germany itself.[99]

Back in Britain, Arthur Keith agreed with these details, but interpreted them rather differently: similarities between Sinanthropus and modern Chinese populations, and between Pithecanthropus and Australasian skulls, indicated that the differences between racial groups stretched far deeper into the evolutionary past than had previously been thought. From the late-1930s, he argued that the five current 'divisions of mankind … Australasian, African, Indoasian, Sinasian and Caucasian,' had separated even earlier than he had previously suggested, diverging and following parallel courses of development from the beginning of the Pliocene, a provisional seven million years ago.[100] Dismissing ideas of dispersal from a common centre as 'little more than a modified version of the account in Genesis of "Shem, Ham, and Japheth,"'[101] Keith deployed a rigidly multiregional perspective to argue that human races did not have common origins, but were dispersed breeds which underwent

'independent transmutations of simian markings'[102] to reach common 'sapiens' status. Key developments, particularly in the brain and endocrine systems, had occurred separately and potentially highly divergently. Palaeoanthropology could therefore sharpen notions of racial difference, and posit essential distinctiveness.

Racial analysis was not the only thing which was embroiled in the increasingly tense atmosphere. The figure of the cave man became more prominent from the mid-1930s, becoming used to further question ideas of progress. A reflection in The Daily Mirror, coinciding with the British Association meeting of 1935, poignantly asked:

> Poor dawn man, learning to walk erect and look at the stars in wonderment. What was he really like; how did he think and live?
>
> All that is left of him is a bone or two to mystify the professors of anthropology.
>
> And so they ponder and argue and theorise, put the dawn man into a catalogue and try to give him a date.
>
> From our immense height of knowledge and power, we look down on our primitive forerunners against their background of remorseless nature.
>
> What progress we have made. Nature has been tamed. Every day we discover some secret of the universe.
>
> We possess enough intelligence and sufficient machinery to make our age a golden one.
>
> What will the anthropologists say, ten thousand years hence, over the discoverable relics of our extraordinary time?
>
> What, indeed, will be the verdict on our civilisation?
>
> Have we but slightly emerged from the position of dawn man, or are we as an experiment at the point of twilight?

> The professors prattle on about our inscrutable forebears. A Senator has been shot in America, three hundred turrets of death have been erected in France, an Italian Dictator is preparing to march into Africa, still more people have been butchered on the roads.
>
> We are getting on nicely, thank you, but not quite as quickly as the dawn man probably hoped.[103]

Growing skepticism with science was mixed with the evolutionary idea of 'failed experiments,' raising doubts as to exactly how progressive and beneficial modern society really was. Progress and humanity were not simply steps on an evolutionary road, but more mysterious forces which were difficult to judge without deep reflection.

The Illustrated London News attempted to keep an optimistic message, with a double-page spread in March 1939 depicting all manner of work on Sinanthropus, as diligent workers excavated the site, studied fossil material, and reconstructed the skull.[104] Yet by then, the Sino-Japanese war had forced the suspension of excavation, although laboratory work continued in Peking until Weidenreich's departure for the USA in 1940. Media reports became increasing troubled, persistently referring to the dangerous situation. The Daily Express wrote how 'shells aimed at the Chinese concentrations near Choukoutien, are falling near the cave of the Peking Man – the oldest habitation of man on earth. … A direct hit by a single shell would wipe out the world's most promising site for revealing secrets concerning the life of man's ancestors. American archaeologists have been excavating there.'[105] Reports were tinged with pessimism and violence, quite a contrast from the exciting detective stories and evocative mysteries of earlier years. The outbreak of the war between the Allied powers and Japan put an end to the research – and to the specimens themselves, which disappeared in the chaos. When reports refocused on Sinanthropus in the post-war period, they were presented in new terms, with American soldiers hunting the bones in Japanese museums,

western scholars engaging in furious disputes with Chinese Communists, or suggestions that the specimens had been ground into medicine by superstitious peasants. While casts of the lost skulls remained in British, American and Chinese museums, the direct connections were broken.


Figure 7: The Illustrated London News, 4 Mar. 1939

# Conclusion

This paper has traced a number of strands to illustrate how an international scientific find was debated and promoted within a particular national context, where it was worked into wider conceptions of the importance of science in the modern world, the elaboration of formerly unknown areas of the past, and wider meditations on progress, racial difference and human nature. In this, it can be seen that the strong public place for scientific debate in interwar Britain constantly needed to be translated into familiar motifs. Rigour and authority was expected alongside dynamism and excitement. This aided the presentation of the research, yet conditioned the ways it was interpreted. The discussion of the excavations, which involved the systematic collection of large numbers of specimens by a bold team of scientists linked to major metropolitan scholars, was ideally constructed to build credibility. Not only was the work and its organization a key aspect of this, but the personas adopted by the scientists were crucial, varying between the detective, the self-sacrificing adventurer, the heroic explorer and the metropolitan patrician. While this directed individuals and reports to adopt particular strategies, it also occluded certain aspects of the research – most notably the Chinese involvement, which was often either glossed over or unacknowledged, despite the efforts of the scientists on the ground.

The interpretation of the origins of humanity followed a similar course. In some respects, mythic themes can be identified, particularly in the models of major systemizing scholars, such as Keith, Weidenreich and Elliot Smith. Yet the discussion of the single type of Peking Man revolved more around the mystery of how human status and origins could be defined, rather than the construction of clear genealogies and easily-graspable myths. Debates attempted to use the character of the bones, the site and the artifacts to slot Sinanthropus into pre-existing conceptual categories, as either one or a combination of

'missing link,' 'grotesque caricature of mankind,' 'cannibal murderer,' 'distant ancestor,' 'lost relative' or 'generalized and progressive type.' Yet despite all these variances, common models existed across both scientific and popular contexts. Human development was seen to depend upon latent progressive capacities, whether these be moral, technological or neurological, yet stopped and started along the evolutionary frame in an uneven manner. It was widely assumed that advancement ought to be part of this process. However, this was not guaranteed, and the ways it had occurred in the evolutionary past and which early types were included within humanity was not necessarily known. This uncertainty was built across – and to some extents drove – the discussions.

This does not mean that this leaves a confused picture, as this very uncertainty was key to the debates. Common across both the discussion on the role of science in the modern world and how the deep evolution of humanity could be understood was a prolonged meditation on progress, development and the basis of human behaviour. Human endeavour from the depths of the Pleistocene to the science of the modern world required exertion, striving and mastery over adversity, yet was constantly threatened by confusion, ignorance, warfare and instability. The potential for human progress was always present, but this was not an optimistic story of inevitable improvement. It was something which needed management, cultivation and effort in order to be achieved. Alongside the tales of heroic scientists working against adversity, unveiling knowledge of brains and tools, and showing the early advancement of human capacities, were the parallel stories of invariable war and conflict, obscurantist pomposity, and ancient and primeval savagery. What was natural, what was not, and what had been surpassed in the dark Pleistocene past and what still remained constant were major subjects of debate. While this could feed into a common context of improvement and stability, it also showed how it could be disrupted. Science – in action and its discoveries – was intrinsically bound with both sides.

## Notes

[1] The Illustrated London News, 2 Dec. 1933.

[2] While it has been customary to begin accounts of the history of palaeoanthropology with descriptions of how little studied the field has been, this is no longer really the case, as it is presently undergoing rapid expansion: see for example Matthew Goodrum, 'The History of Human Origins Research and its Place in the History of Science: Research Problems and Historiography,' History of Science (2009), 47, pp. 337-57, which effectively sketches out the current historiography. General surveys include Brian Regal, Human Evolution: A Guide to the Debates, Santa Barbara, CA: ABC-CLIO, 2004, and Peter Bowler, Theories of Human Evolution: A Century of Debate, 1844-1944, Oxford: Oxford University Press, 1986. Particularly significant specific works are Marianne Sommer, Bones and Ochre: The Curious Afterlife of the Red Lady of Paviland, Cambridge, MA: Harvard University Press, 2007, Stephanie Moser, Ancestral Images: The Iconography of Human Origins, Ithaca, NY: Cornell University Press, 1998, and Constance Areson Clark, God – or Gorilla: Images of Evolution in the Jazz Age, Baltimore, MD: John Hopkins University Press, 2008. Important theoretical works include Raymond Corbey and Wil Roebroeks (eds.), Studying Human Origins: Disciplinary History and Epistemology, Amsterdam: Amsterdam University Press, 2001, Misia Landau, Narratives of Human Evolution, New Haven: Yale University Press, 1991, and Wiktor Stoczkowski, Anthropologie naïve, anthropologie savante: De l'origine de l'homme de l'imagination et des idées reçues, Paris: CNRS, 1994.

[3] The excavations are discussed extensively in Noel Boaz and Russell Ciochon, Dragon Bone Hill: An Ice-Age Saga of Homo erectus, Oxford: Oxford University Press, 2004, Regal, op.cit. (2), pp. 82-93, and Harry Shapiro, Peking Man, London: Simon and Schuster, 1974. Jia Lanpo and Huang Weiwan, The Story of Peking Man: From Archaeology to Mystery, Oxford:

Oxford University Press, 1990, and Johan Gunnar Andersson, Children of the Yellow Earth: Studies in Prehistoric China, London, 1934, both provide excellent participant accounts.

[4] Sigrid Schmalzer, The People's Peking Man: Popular Science and Human Identity in Twentieth-Century China, Chicago: University of Chicago Press, 2008, is by far the best; Barry Sautman, 'Peking man and the politics of paleoanthropological nationalism in China,' Journal of Asian Studies (2001), 60, pp. 95-124, is rather controversial, while James Leibold, 'Competing Narratives of Racial Unity in Republican China: From the Yellow Emperor to Peking Man,' Modern China 2006, 32, pp. 181-220, offers an interesting examination of its place within Republican racial ideas.

[5] The Guardian, 20 Feb. 1930.

[6] The Illustrated London News, 4 March 1939.

[7] Fa-Ti-Fan, 'Redrawing the Map: Science in Twentieth-Century China,' Isis (2007), 98, pp. 524-538, 531.

[8] See particularly the essays in Christopher Lawrence and Anna-K. Mayer (eds.), Regenerating England: Science, Medicine and Culture in Inter-War Britain, Amsterdam and Atlanta, GA: Rodopi, 2000, Richard Overy, The Morbid Age: Britain between the Wars, London: Allen Lane, 2009, Bernhard Rieger, Technology and the Culture of Modernity in Britain and Germany, 1890-1945, Cambridge: Cambridge University Press, 2009, Roger Smith, 'Biology and Values in Interwar Britain: C. S. Sherrington, Julian Huxley and the Vision of Progress,' Past and Present (2003), 178, pp. 210-242, and Peter Bowler, Science for All: The Popularization of Science in Early Twentieth-Century Britain, Chicago: University of Chicago Press, 2009.

[9] Smith, op.cit. (8), p. 242.

[10] See for example Mark Hampton, Visions of the Press in Britain, 1850-1950, Urbana and Chicago: University of Illinois Press, 2004, D. L. LeMahieu, A Culture for Democracy: Mass

Communication and the Cultivated Mind in Britain between the Wars, Oxford: Oxford University Press, 1988. The extent of newspaper science in general is discussed in Bowler, op.cit. (8), pp. 185-214.

[11] Claims for its importance are made in Bowler, op.cit. (8), p. 49, and Moser, op.cit. (2), pp. 154-6.

[12] Reported as 'Our Ugly Ancestors' by The Daily Mirror, 21 Dec. 1929.

[13] Clark, op.cit. (2), p. 4.

[14] Bowler, op.cit. (8), pp. 48-9:

[15] Claudine Cohen, Un néanderthalien dans le métro, Paris: Seuil, 2007, p. 12. For more on the changing reception of Neanderthal man, see Marianne Sommer, 'Mirror, Mirror on the Wall: Neanderthal as Image and "Distortion" in early 20th-Century French Science and Press,' Social Studies of Science (2006), 36, pp. 207-40, and Michael Hammond, 'The Expulsion of the Neanderthals from Human Ancestry: Marcellin Boule and the Social Context of Scientific Research,' Social Studies of Science (1982), 12, pp. 1-36.

[16] Bert Theunissen, Eugène Dubois and the Ape-Man from Java: The History of the First `Missing Link' and Its Discoverer, Dordrecht: Springer, 1988, and Regal, op.cit. (2), pp. 64-9.

[17] While the Sinanthropus literature tends to revolve around the 'Whodunnit?' quality of the fate of the specimens, the Piltdown work tends to focus on the perpetrator of the fraud. However, Murray Goulden, 'Boundary-Work and the Human-Animal Boundary: Piltdown Man, Science and the Media,' Public Understandings of Science (2009), 18, pp. 275-291, and Jonathan Sawday, '"New Men, Strange Faces, Other Minds": Arthur Keith, Race and the Piltdown Affair (1912-53)' in Waltraud Ernst and Bernard Harris (eds.), Race, Science and Medicine, 1700-1960, New York: Routledge, 1999, pp. 259-88, do make excellent attempts to place it within its contemporary media and scientific contexts.

[18] The Illustrated London News, 28 December1912.

[19] Daily Express, 7 Aug. 1926.

[20] See for example Gavin Schaffer, Racial Science and British Society, 1930-62, Basingstoke: Palgrave-MacMillan, 2008, pp. 45-7, and Overy, op.cit. (8), p. 197. Keith has also been discussed in Bowler, op.cit. (8), pp. 230-33, Sawday, op.cit. (17), and Rhodri Hayward, 'The Biopolitics of Arthur Keith and Morley Roberts,' in Lawrence and Mayer (eds.), op.cit. (8), pp. 251-74, 251.

[21] Arthur Keith, The Antiquity of Man, London, 1929, p. iv.

[22] There is rather less work on Elliot Smith than on Keith, which tends to be confined to the development of diffusionist archaeology. See for example, Adam Stout, Creating Prehistory: Druids, Ley Hunters and Archaeologists in Pre-War Britain, Oxford: Blackwell Publishing, 2008, pp. 74-112.

[23] Grafton Elliot Smith, Human History, London, 1934, p. 73.

[24] Ibid., p. 497.

[25] Elazar Barkan, The Retreat of Scientific Racism: Changing Concepts of Race in Britain and the United States Between the World Wars, Cambridge: Cambridge University Press, 1992, pp. 38-53, Sommer, op.cit. (2), pp. 187-212, and Landau, op.cit. (2), on 'Keith's Womb,' pp. 67-101 and 'Elliot Smith's Tomb,' pp. 102-42.

[26] For this, see Michael Hammond, 'Anthropology as a weapon of social combat in late-nineteenth-century France,' Journal of the History of the Behavioral Sciences (1980), 16, pp. 188-132, and Theodore Koditschek, 'Narrative Time and Racial/Evolutionary Time in nineteenth-century British liberal imperial historiography' in Catherine Hall and Keith McClelland (eds.), Race, Nation and Empire, Manchester: Manchester University Press, 2010, pp. 36-55.

[27] Arthur Keith, 'Conceptions of Man's Ancestry,' Nature 4 May 1935; Marianne Sommer, 'Ancient Hunters and Their Modern Representatives: William Sollas's (1849–1936)

Anthropology from Disappointed Bridge to Trunkless Tree and the Instrumentalisation of Racial Conflict,' Journal of the History of Biology (2005), 38, pp. 327-65, and Raf de Bont, 'The Creation of Prehistoric Man. Aimé Rutot and the Eolith Controversy, 1900-1920,' Isis (2003), 94, pp. 604-30, discuss this in two distinct national contexts.

[28] The visual language attached to these has been discussed in Areson, op.cit. (2), pp. 132-161, and Richard Delisle, 'Welcome to the Twilight Zone: a forgotten early phase of human evolutionary studies,' Endeavour (2012), 36, pp. 55-64.

[29] Discussed in Hammond, op.cit. (15), and as a general trend of the field in Bowler, op.cit. (2), pp. 75-111.

[30] See particularly Fa-ti Fan, British Naturalists in Qing China: Science, Empire, and Cultural Encounter, Cambridge, MA: Harvard University Press, 2004.

[31] This has been traced in a variety of fields including Zuoyue Wang, 'Saving China through Science: The Science Society of China, Scientific Nationalism, and Civil Society in Republican China,' Osiris 2002, 17, pp. 291-322, and Benjamin Elman, On Their Own Terms: Science in China, 1550–1900, Cambridge, MA: Harvard University Press, 2005.

[32] Grace Yen Shen. 'Taking to the Field: Geological Fieldwork and National Identity in Republican China,' Osiris (2009), 24, pp. 231-52.

[33] Charlotte Furth, Ting Wen-Chiang: Science and China's New Culture, Cambridge, MA: Harvard University Press, 1970.

[34] Andersson's life and career is best examined through his own books, particularly The Dragon and the Foreign Devils, Boston, 1928, and op.cit. (4). Also see M. Fiskesjö and Chen Xingcan, China before China: Johan Gunnar Andersson, Ding Wenjiang, and the Discovery of China's Prehistory, Stockholm: Museum of Far Eastern Antiquities, 2004.

[35] Grabau's career is examined in Allan Mazur: A Romance in Natural History: The Lives and Works of Amadeus Grabau and Mary Antin, Syracuse, NY: Garret, 2004. The ways in which

this allowed an independent disciplinary identity to be created for Peking geology have been discussed in Dajian Zhu and Homer Le Grand, 'Plates, Politics, and Localism: Geological Theory in China,' History and Anthropology (1999), 11, pp. 291-327.

[36] See particularly Mary Brown Bullock, The Oil Prince's Legacy: Rockefeller Philanthropy in China, Washington DC: Stanford University Press, 2011, and An American Transplant: Rockefeller Foundation and Peking Union Medical College, Berkeley: University of California Press, 1992.

[37] For Davidson Black, see Dora Hood, Davidson Black: A Biography, Toronto: University of Toronto Press, 1964. He is the subject of a forthcoming study by Julie Cormack.

[38] Davidson Black, 'Asia and the Dispersal of Primates,' Bulletin of the Geological Society of China (1925), 4, pp. 133-184; this notion of Asiatic origins was quite conventional in this period: see Robin Dennell, 'From Sangiran to Oldwai, 1937-1960: The Quest for "Centre" of Hominid Origins in Asia and Africa,' in Corbey and Roebroeks (eds.), op.cit. (2), pp. 45-66

[39] Davidson Black to Henry Houghton, 12 Dec. 1922: Rockefeller Archive Center, Sleepy Hollow, New York (hereafter RAC), CMB Inc., Series IV2B9, Box 11, Folder 72.

[40] For British stereotypes of China, see Robert Bickers, Britain in China: Community, Culture and Colonialism, 1900-49, Manchester: Manchester University Press, 1999, pp. 22-66. Phoebe Chow, 'British opinion and policy towards China, 1922-1927' (LSE PhD thesis: 2011, Ethesis: 228) discusses shifts in the 1920s.

[41] The best analysis of this is found in Schmalzer, op.cit. (4), pp. 34-7.

[42] Bulletin of the Geological Society of China (1926), 5, pp. 197-200; it was then reported in Nature 20 Nov. 1926, which followed up the story on 31 Dec. 1927.

[43] Arthur Keith, New Discoveries Relating to the Antiquity of Man, London, 1931, p. 258.

[44] The Illustrated London News, 22 June 1922.

[45] The Times, 21 Feb. 1928. For a discussion of the Hesperopithecus episode in its American context, see Regal, op.cit. (2), pp. 61-2, and Clark, op.cit. (2), pp. 120-124.

[46] W. H. Wong 'The Search for Early Man in China,' Bulletin of the Geological Society of China (1927), 6, pp. 335-6.

[47] Hood, op.cit. (37), p. 90.

[48] Davidson Black to Roger S. Greene, 17 Feb. 1929: RAC, CMB Inc., Series IV2B9, Box 58, Folder 406.

[49] The Guardian, 10 September 1929.

[50] The Illustrated London News, 19 Oct. 1929.

[51] The Guardian, 16 Dec. 1929

[52] Nature, 30 Dec. 1929.

[53] The Guardian, 20 Feb. 1930.

[54] Ibid.

[55] The Daily Express, 15 Aug. 30.

[56] Davidson Black to Margery K. Egglestone, 30 June 1930: RAC, CMB Inc., Series IV2B9, Box 11, Folder 72.

[57] Grafton Elliot Smith, The Significance of the Peking Man, Edinburgh, 1931, pp. 5-7.

[58] The Guardian, 17 Mar. 1934.

[59] Landau and Stoczkowski, op.cit. (2).

[60] Davidson Black, 'Preliminary Notice of the Discovery of an Adult Sinanthropus skull at Chou Kou Tien,' Bulletin of the Geological Society of China (1929), 8, pp. 207-211, 211.

[61] Black to Agnes M. Pearce, 11 Jan. 1930: RAC, CMB Inc., Series IV2B9, Box 11, Folder 72.

[62] Nature, 16 Dec. 1933.

[63] Grafton Elliot Smith, The Search for Man's Ancestors, London, 1931, Prefunctory Note.

[64] Keith, op.cit. (43), p. 294.

[65] Ibid., p. 274.

[66] The Guardian, 3 Feb. 1929.

[67] The Daily Express, 28 Feb. 1930.

[68] The Guardian, 16 Nov. 1929.

[69] Keith, op.cit. (43), p. 274.

[70] The Guardian, 16 Nov. 1929.

[71] The Times, 30 Dec. 1929.

[72] See Anna-K. Mayer, "'A Combative Sense of Duty:" Englishness and the Scientists,' in Lawrence and Mayer (eds.), op.cit. (8), pp. 67-106. However, Bowler, op.cit. (8), pp. 10-11, doubts how widely listened to these programs actually were.

[73] John Baker, 'Missing Links,' in Mary Adams (ed.), Science in the Changing World, London, 1933, pp. 149-50

[74] Ibid., pp. 148-9.

[75] The Times, 3 Mar. 1930.

[76] Davidson Black, 'Preliminary Notice of the Discovery of an Adult Sinanthropus skull at Chou Kou Tien,' Bulletin of the Geological Society of China (1929), 8, pp. 207-11, 208; also see Elliot Smith, op.cit. (57), p. 20.

[77] Landau, op.cit. (2), pp. 6-8, and Stoczkowski, op.cit. (2), p. 20, discuss mastery of harsh nature through culture as a key trope in human evolutionary narratives.

[78] Breuil has been the subject of a recent biography by Arnaud Hurel, L'abbé Henri Breuil. Un préhistorien dans le siècle, Paris: CNRS, 2011. His interactions with British prehistoric archaeologists are discussed in Anne O'Connor, Finding Time for the Old Stone Age: A History of Paleolithic Archaeology and Quaternary Geology in Britain, 1860-1960, Oxford: Oxford University Press, 2007, particularly pp. 277-306.

[79] The Times, 4 Nov. 1931.

[80] Davidson Black, 'On the Discovery, Morphology, and Environment of Sinanthropus pekinensis,' Philosophical Transactions of the Royal Society of London. Series B, Containing Papers of a Biological Character (1934), 223, pp. 57-120, 115-6.

[81] Ibid., p. 113.

[82] The Times, 11 Dec. 1931.

[83] Nature 28 May 1932.

[84] The Times, 3 May 1932; for Moir, see O'Connor, op.cit. (78), pp. 151-4 and 169-201, Sommer, op.cit. (2), pp. 200-3.

[85] The Guardian, 17 Mar. 1934.

[86] The Guardian, 9 Dec. 1932.

[87] The Times, 23 Aug. 1937.

[88] The Times, 17 Mar. 1934.

[89] Warren Weaver to Roger S. Greene, 7 June 1934: RAC, CMB, Inc., IV2B9, Box 57, Folder 403.

[90] These were all finally described in Franz Weidenreich, The Skull of Sinanthropus pekinensis: A Comparative Study on a Primitive Hominid Skull, Lancaster, PA, 1943, pp. 4-19.

[91] The Times, 25 Nov. 1936 and Nature, 12 Dec. 1936.

[92] For the roots of German liberal anthropology, see Andrew Evans, Anthropology at War: World War I and the Science of Race in Germany, Chicago: University of Chicago Press, 2010, pp. 21-96. Jewish race scientists are disccused in Veronika Lipphardt, Biologie der Juden: Jüdische Wissenschaftler über "Rasse" und Vererbung 1900-1935, Berlin: Vandenhoeck & Ruprecht, 2008, which includes an entire section on Weidenreich on pp. 259-277.

[93] Daily Express, 2 Jan. 1937 and Daily Mirror, 3 Jan.1937.

[94] A. Hurel and M. A. Lumley, 'La formation des élites scientifiques chinoises en Europe dans la première moitie du XXe siècle: l'exemple du préhistorien Pei Wen Chung,' L'Anthropologie (2005), 109, pp. 195-213.

[95] The Times, 2 Mar. 1938.

[96] Daily Mirror, 12 Apr. 1938.

[97] Traced in Schaffer, op.cit. (20), pp. 15-62. Also see Barkan, op.cit. (25).

[98] The Times, 21 Mar. 1939.

[99] For more on this, see Weidenreich, Apes, Giants and Man, Chicago, 1946.

[100] These were expounded in Arthur Keith, 'History from caves: A new theory of the origin of modern races of mankind,' Caves and Caving (1937), 1, pp. 1-6, and reported in The Times, 27 July 1936.

[101] Arthur Keith, A New Theory of Human Evolution, London, 1949, p. 257.

[102] Ibid., p. 258.

[103] Daily Mirror, 10 Sept. 1935.

[104] The Illustrated London News, 4 Mar. 1939.

[105] Daily Express; 26 Aug. 1937.